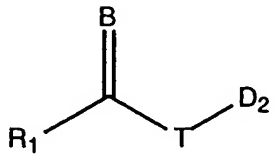
CLAIMS

What is claimed is:

1. A potassium channel activator compound comprising at least one NO group, or at least one NO and NO_2 group, or a pharmaceutically acceptable salt thereof.

2. A compound of formula (I), formula (II), formula (III), formula (IV), formula (V), or formula (VI), or a pharmaceutically acceptable salt thereof:

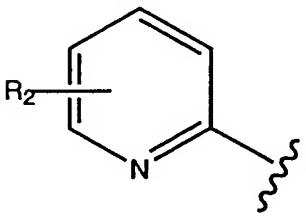
wherein the compound of formula (I) is:

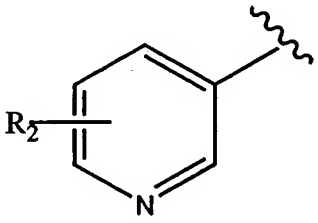


(I)

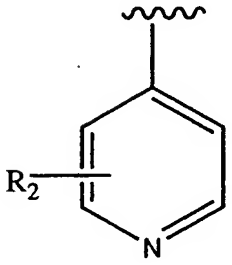
wherein

R_1 is:

(1) 

(2) 

or

(3) 

wherein

R_2 is a hydrogen atom or a halogen atom;

B is oxygen or -N-CN;

D_2 is Q or K;

Q is -NO or $-NO_2$;

K is $-W_a-E_b-(C(R_e)(R_f))_p-E_c-(C(R_e)(R_f))_x-W_d-(C(R_e)(R_f))_y-W_i-E_j-W_g-(C(R_e)(R_f))_z$-T-Q;

a, b, c, d, g, i and j are each independently an integer from 0 to 3;

p, x, y and z are each independently an integer from 0 to 10;

W at each occurrence is independently -C(O)-, -C(S)-, -T-, $-(C(R_e)(R_f))_h-$, an alkyl group, an aryl group, a heterocyclic ring, an arylheterocyclic ring, or $-(CH_2CH_2O)_q-$;

E at each occurrence is independently -T-, an alkyl group, an aryl group, $-(C(R_e)(R_f))_h-$, a heterocyclic ring, an arylheterocyclic ring, or $-(CH_2CH_2O)_q-$;

h is an integer from 1 to 10;

q is an integer from 1 to 5;

R_e and R_f are each independently a hydrogen, an alkyl, a cycloalkoxy, a halogen, a hydroxy, an hydroxyalkyl, an alkoxyalkyl, an arylheterocyclic ring, an alkylaryl, a cycloalkylalkyl, a heterocyclicalkyl, an alkoxy, a haloalkoxy, an amino, an alkylamino, a dialkylamino, an arylamino, a diarylamino, an alkylarylamino, an alkoxyhaloalkyl, a haloalkoxy, a sulfonic acid, a sulfonic ester, an alkylsulfonic acid, an arylsulfonic acid, an arylalkoxy, an alkylthio, an arylthio, a cycloalkylthio, a cycloalkenyl, a cyano, an aminoalkyl, an aminoaryl, an aryl, an arylalkyl, an alkylaryl, a carboxamido, a alkylcarboxamido, an arylcarboxamido, an amidyl, a carboxyl, a carbamoyl, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarbonyl, an arylcarbonyl, an ester, a carboxylic ester, an alkylcarboxylic ester, an arylcarboxylic ester, a haloalkoxy, a sulfonamido, an alkylsulfonamido, an arylsulfonamido, a sulfonic ester, a urea, a phosphoryl, a nitro, -T-Q , or $(C(R_e)(R_f))_k$-T-Q, or R_e and R_f taken together with the carbons to which they are attached form a carbonyl, a methanthial, a heterocyclic ring, a cycloalkyl group or a bridged cycloalkyl group;

k is an integer from 1 to 3;

T at each occurrence is independently a covalent bond, a carbonyl, an oxygen, $-S(O)_o-$ or $-N(R_a)R_i-$;

o is an integer from 0 to 2;

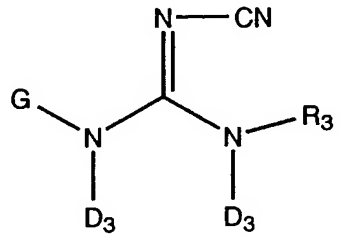
R_a is a lone pair of electrons, a hydrogen or an alkyl group;

R_i is a hydrogen, an alkyl, an aryl, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarboxylic ester, an arylcarboxylic ester, an alkylcarboxamido, an

arylcarboxamido, an alkylaryl, an alkylsulfinyl, an alkylsulfonyl, an arylsulfinyl, an arylsulfonyl, a sulfonamido, a carboxamido, a carboxylic ester, an amino alkyl, an amino aryl, $-CH_2-C(T-Q)(R_e)(R_f)$, or $-(N_2O_2-)^-\bullet M^+$, wherein M^+ is an organic or inorganic cation; with the proviso that when R_i is $-CH_2-C(T-Q)(R_e)(R_f)$ or $-(N_2O_2)^-\bullet M^+$, or R_e or R_f are T-Q or $(C(R_e)(R_f))_k$-T-Q, then the "-T- Q" subgroup can be a hydrogen, an alkyl, an alkoxy, an alkoxyalkyl, an aminoalkyl, a hydroxy, a heterocyclic ring or an aryl group; with the proviso that when the T in "-T-Q" is oxygen then Q is not $-NO_2$; and provided that the compound contains at least one nitrite, nitrate, thionitrite or thionitrate group;

provided that the "$-T-D_2$" group is not N'-(2-nitroxyethyl), N'-(3-nitroxypropyl), N'-(4-nitrobenzyl), N'-(2-(4-nitrophenyl)-2-nitroxyethyl) or N'-(1-methyl-2-(4-nitrophenyl)-2-nitroxyethyl);

wherein the compound of Formula (II) is:



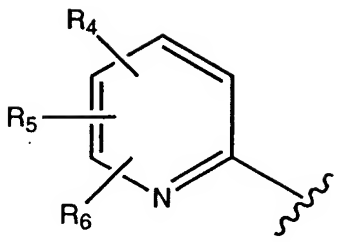
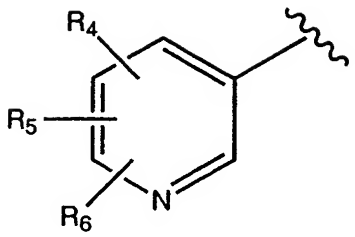
(II)

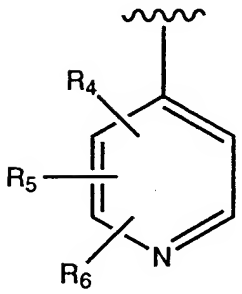
wherein

R_3 is a hydrogen, an alkyl, an aryl, an alkylaryl or K;

D_3 is a hydrogen or D_2, with the proviso that at least one D_3 must be designated as D_2 if R_3 is not K;

G is:

(1)  (2)  or

(3) 

R_4, R_5, and R_6 are each independently a hydrogen, a halogen, a hydroxy, a lower alkyl, an alkoxy, a nitrile, a nitrite, a carboxyamido, a carboxylic ester, an alkylsulfinyl, an arylsulfinyl, an aminoalkyl, an alkylthio, or an arylthio; or R_5 and R_6 taken together are a group which forms a ring with the two carbon atoms to which they are attached, wherein the group is $-S(O)_t-(CH_2)_r-CH_2-$, $-C(O)Z-(CH_2)_o-CH_2$, or $-C(O)-CH_2-(CH_2)_o-Z-$;

t is an integer of 1 or 2;

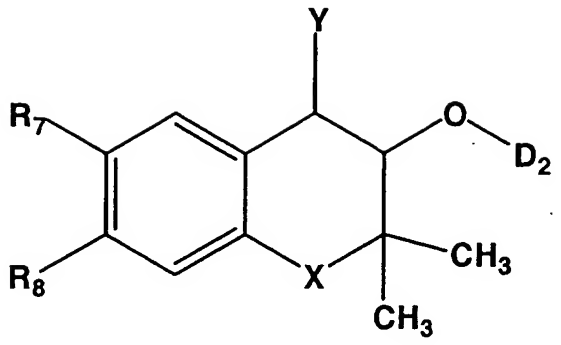
r is an integer from 1 to 3;

Z is oxygen, NR_7 or CH_2;

R_7 is hydrogen or R_3; and

o and D_2 are as defined herein;

wherein the compound of Formula (III) is:



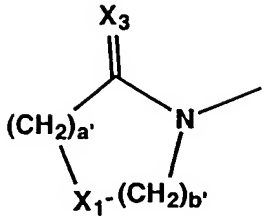
(III)

wherein

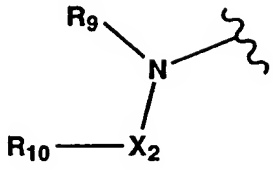
X $-(CH_2)_a-$ or oxygen;

Y is:

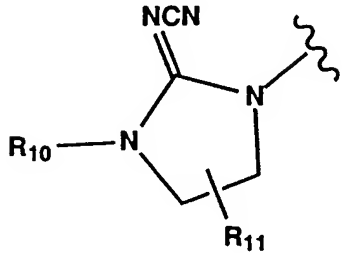
(a)



(b)



(c)



(d)

or $-X_1R_{13}$

R_7 and R_8 are each independently a hydrogen, an alkylcarbonyl, an alkoxycarbonyl, a heterocyclic ring, an ester, a nitro, a cyano, a halo, a haloalkyl, an alkylsulphinyl, an alkylsulphonyl, a sulfonic ester, an amidyl, a carbamate, a formyl, a sulfonamido, or a carboxamido;

R_9 is an aryl or a heterocyclic ring;

R_{10} is a carboxylic ester, a carboxylic acid, a carboxamido, a urea, a thiourea, an

amidyl, a sulfamoyl, a hydroxyalkyl, -C(O)OD, -N(R_{59})(C=NCN)$NR_{51}R_{57}$, -N(R_{59})(C=NCN)SR_{12}, -N(R_{59})(C=NCN)OR_{12}, -P(O)(OR_{50})$_2$, -P(O)($O(CH_2)_{k'}O$), -SR_{11}, -S(O)R_{11}, -$S(O)_2R_{11}$, -OR_{11}, a cyano, a heterocyclic ring, a pyridine N-oxide or -C($NR_{51}R_{57}$)=CH-C(O)R_{59};

R_{11} is a hydrogen, an alkyl, an aryl, an arylalkyl, a cycloalkyl, or cycloalkylalkyl;

R_{12} is an alkyl, an aryl, an alkylaryl, or an arylheterocyclic ring;

R_{13} is aryl, a heterocyclic ring, a cycloalkyl

X_1 is an oxygen, a sulfur, or -NH-;

X_2 is a hydrogen or an alkyl group;

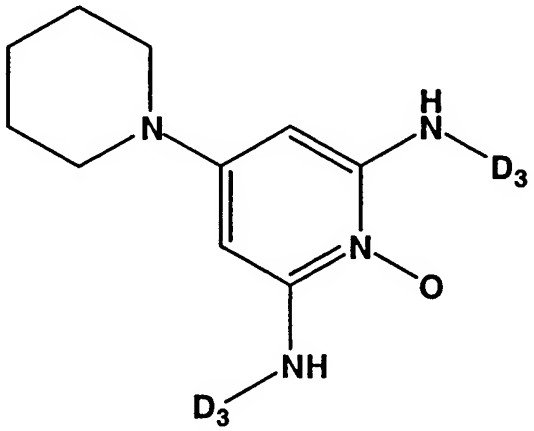
X_3 is oxygen or sulfur;

k' is an interger from 2 to 4;

a' and b'are each independently an integer from 0 to 3; and

a, D, D_2, R_{50}, R_{51}, R_{57} and R_{59} are as defined herein;

wherein the compound of Formula (IV) is:



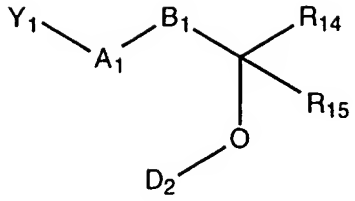
(IV)

wherein

D_3 is hydrogen or D_2 with the proviso that at least one D_3 must be D_2; and

D_2 is as defined herein;

wherein the compound of Formula (V) is:



V

wherein,

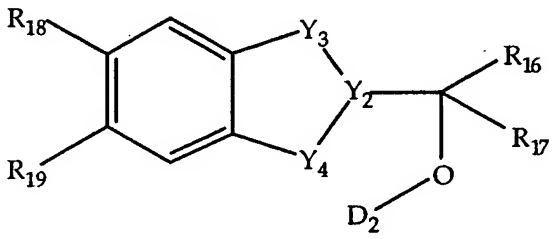
R_{14} and R_{15} are independently selected from a lower alkyl, a lower haloalkyl or R_{14} and R_{15} together with the carbon to which they are attached form a cyclic haloalkyl group;

A_1-B_1 is -NHC(O)-, -OCH_2-, -SCH_2- $NHCH_2$, -CH=CH-, or -CH=CH-; and

Y_1 is an aryl group; and

D_2 is as defined herein;

wherein the compound of Formula (VI) is:



VI

wherein,

R_{16} and R_{17} are each independently a lower alkyl, a lower haloalkyl or R_{16} and R_{17} together with the carbon to which they are attached form a cyclic haloalkyl group;

Y_3 is an sp^2-hybridized atom and Y_2, Y_3, and Y_4 together with the carbon atoms to which they are attached form a 5- or 6-membered heterocyclic ring;

R_{18} and R_{19} are each independently a hydrogen, a nitro, a cyano, a halo, a haloalkyl, an alkylsulfonyl, or an aryl, with the proviso that either R_{18} or R_{19} must

be a hydrogen but that both R_{18} and R_{19} cannot be a hydrogen; and

D_2 is as defined herein.

3. The compound of claim 2, wherein the compound of Formula (I) is a nitrosated nicorandil, a nitrosylated nicorandil or a nitrosated and nitrosylated nicorandil.

4. The compound of claim 2, wherein the compound of Formula (II) is a nitrosated pinacidil, a nitrosylated pinacidil or a nitrosated and nitrosylated pinacidil.

5. The compound of claim 2, wherein the compound of Formula (III) is a nitrosated cromakalim, a nitrosylated cromakalim, a nitrosated and nitrosylated cromakalim, nitrosated lemakalim, a nitrosylated lemakalim, or a nitrosated and nitrosylated lemakalim.

6. The compound of claim 2, wherein the compound of Formula (IV) is a nitrosated minoxidil, a nitrosylated minoxidil or a nitrosated and nitrosylated minoxidil.

7. The compound of claim 2, wherein the compound of Formula (V) is a nitrosated ZD 6169, a nitrosylated ZD 6169 or a nitrosated and nitrosylated ZD 6169.

8. A composition comprising the compound of claim 2 and a pharmaceutically acceptable carrier.

9. A method for treating a sexual dysfunction in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 8.

10. The method of claim 9, wherein the patient is female.

11. The method of claim 9, wherein the patient is male.

12. The method of claim 9, wherein the composition is administered by intracavernosal injection, by transurethral application or topically.

13. The method of claim 12, wherein the composition is administered topically in the form of a cream, a spray, a lotion, a gel, an ointment, an emulsion, a foam, a coating for a condom, or a liposome composition.

14. A method for treating a cardiovascular disorder, a cerebrovascular disorder, hypertension, asthma, baldness, urinary incontinence, epilepsy, a sleep disorder, a gastrointestinal disorder, a migraine, an irritable bowel syndrome or

sensitive skin in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 8.

15. The composition of claim 8, further comprising at least one vasoactive agent.

16. The composition of claim 15, wherein the vasoactive agent is a calcium channel blocker, an α-adrenergic receptor antagonist, a β–blocker, a phosphodiesterase inhibitor, adenosine, an ergot alkaloid, a vasoactive intestinal peptide, a prostaglandin, a dopamine agonist, an opioid antagonist, an endothelin antagonist, a thromboxane inhibitor or a mixture thereof.

17. A method for treating a sexual dysfunction in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 15.

18. The method of claim 17, wherein the patient is female.

19. The method of claim 17, wherein the patient is male.

20. The method of claim 17, wherein the composition is administered by intracavernosal injection, by transurethral application or topically.

21. The method of claim 20, wherein the composition is administered topically in the form of a cream, a spray, a lotion, a gel, an ointment, an emulsion, a foam, a coating for a condom, or a liposome composition.

22. A method for treating a cardiovascular disorder, a cerebrovascular disorder, hypertension, asthma, baldness, urinary incontinence, epilepsy, a sleep disorder, a gastrointestinal disorder, a migraine, an irritable bowel syndrome or sensitive skin in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 15.

23. A composition comprising at least one compound of claim 2 and at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor or is a substrate for nitric oxide synthase or a pharmaceutically acceptable salt thereof.

24. The composition of claim 23, wherein the at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor or is a substrate for nitric oxide synthase is an S-nitrosothiol.

25. The composition of claim 24, wherein the S-nitrosothiol is S-nitroso-N-acetylcysteine, S-nitroso-captopril, S-nitroso-N-acetylpenicillamine, S-nitroso-homocysteine, S-nitroso-cysteine or S-nitroso-glutathione.

26. The composition of claim 24, wherein the S-nitrosothiol is:

(i) $HS(C(R_e)(R_f))_mSNO$;

(ii) $ONS(C(R_e)(R_f))_mR_e$; and

(iii) $H_2N\text{-}CH(CO_2H)\text{-}(CH_2)_m\text{-}C(O)NH\text{-}CH(CH_2SNO)\text{-}C(O)NH\text{-}CH_2\text{-}CO_2H$;

wherein m is an integer from 2 to 20; R_e and R_f are each independently a hydrogen, an alkyl, a cycloalkoxy, a halogen, a hydroxy, an hydroxyalkyl, an alkoxyalkyl, an arylheterocyclic ring, an alkylaryl, a cycloalkylalkyl, a heterocyclicalkyl, an alkoxy, a haloalkoxy, an amino, an alkylamino, a dialkylamino, an arylamino, a diarylamino, an alkylarylamino, an alkoxyhaloalkyl, a haloalkoxy, a sulfonic acid, a sulfonic ester, an alkylsulfonic acid, an arylsulfonic acid, an arylalkoxy, an alkylthio, an arylthio, a cycloalkylthio, a cycloalkenyl, a cyano, an aminoalkyl, an aminoaryl, an aryl, an arylalkyl, an alkylaryl, a carboxamido, a alkylcarboxamido, an arylcarboxamido, an amidyl, a carboxyl, a carbamoyl, a carbamate, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarbonyl, an arylcarbonyl, an ester, a carboxylic ester, an alkylcarboxylic ester, an arylcarboxylic ester, a haloalkoxy, a sulfonamido, an alkylsulfonamido, an arylsulfonamido, a sulfonic ester, a urea, a phosphoryl, a nitro, -T-Q , or $(C(R_e)(R_f))_k$-T-Q, or R_e and R_f taken together with the carbons to which they are attached form a carbonyl, a methanthial, a heterocyclic ring, a cycloalkyl group or a bridged cycloalkyl group; Q is -NO or $-NO_2$; and T is independently a covalent bond, a carbonyl, an oxygen, $-S(O)_o$- or $-N(R_a)R_i$-, wherein o is an integer from 0 to 2, R_a is a lone pair of electrons, a hydrogen or an alkyl group; R_i is a hydrogen, an alkyl, an aryl, an alkylcarboxylic acid, an aryl carboxylic acid, an alkylcarboxylic ester, an arylcarboxylic ester, an alkylcarboxamido, an arylcarboxamido, an alkylaryl, an alkylsulfinyl, an alkylsulfonyl, an arylsulfinyl, an arylsulfonyl, a sulfonamido, a carboxamido, a carboxylic ester, an amino alkyl, an amino aryl, $-CH_2\text{-}C(T\text{-}Q)(R_e)(R_f)$, or $-(N_2O_2\text{-})\bullet M^+$, wherein M^+ is an organic or inorganic cation; with the proviso that when R_i is $-CH_2\text{-}C(T\text{-}Q)(R_e)(R_f)$ or $-(N_2O_2\text{-})\bullet M^+$; then "-T-Q" can be a hydrogen, an alkyl group, an alkoxyalkyl group, an aminoalkyl group, a hydroxy group or an aryl group.

27. The composition of claim 23, wherein the at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase is:

(i) a compound that comprises at least one ON-O-, ON-N- or ON-C- group;

(ii) a compound that comprises at least one O_2N-O-, O_2N-N-, O_2N-S- or -O_2N-C- group;

(iii) a N-oxo-N-nitrosoamine having the formula: R^1R^2-N(O-M^+)-NO, wherein R^1 and R^2 are each independently a polypeptide, an amino acid, a sugar, an oligonucleotide, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted hydrocarbon, or a heterocyclic group, and M^+ is an organic or inorganic cation.

28. The composition of claim 27, wherein the compound comprising at least one ON-O-, ON-N- or ON-C- group is an ON-O-polypeptide, an ON-N-polypepetide, an ON-C-polypeptide, an ON-O-amino acid, an ON-N-amino acid, an ON-C-amino acid, an ON-O-sugar, an ON-N-sugar, an ON-C-sugar, an ON-O-oligonucleotide, an ON-N-oligonucleotide, an ON-C-oligonucleotide, a straight or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic ON-O-hydrocarbon, a straight or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic ON-N-hydrocarbon, a straight or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic ON-C-hydrocarbon, an ON-O-heterocyclic compound, an ON-N-heterocyclic compound or a ON-C-heterocyclic compound.

29. The composition of claim 27, wherein compound comprising at least one O_2N-O-, O_2N-N-, O_2N-S- or O_2N-C- group is an O_2N-O-polypeptide, an O_2N-N-polypeptide, an O_2N-S-polypeptide, an O_2N-C-polypeptide, an O_2N-O-amino acid, O_2N-N-amino acid, O_2N-S-amino acid, an O_2N-C-amino acid, an O_2N-O-sugar, an O_2N-N-sugar, O_2N-S-sugar, an O_2N-C-sugar, an O_2N-O-oligonucleotide, an O_2N-N-oligonucleotide, an O_2N-S-oligonucleotide, an O_2N-C-oligonucleotide, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted O_2N-O-hydrocarbon, a straight or branched, saturated or unsaturated,

aliphatic or aromatic, substituted or unsubstituted O_2N-N-hydrocarbon, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted O_2N-S-hydrocarbon, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted O_2N-C-hydrocarbon, an O_2N-O-heterocyclic compound, an O_2N-N-heterocyclic compound, an O_2N-S-heterocyclic compound or an O_2N-C-heterocyclic compound.

30. The composition of claim 23, wherein the at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase, is L-arginine, L-homoarginine, N-hydroxy-L-arginine, nitrosated L-arginine, nitrosylated L-arginine, nitrosated N-hydroxy-L-arginine, nitrosylated N-hydroxy-L-arginine, citrulline, ornithine, glutamine, lysine, polypeptides comprising at least one of these amino acids or inhibitors of the enzyme arginase.

31. A method for treating a sexual dysfunction in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 23.

32. The method of claim 31, wherein the patient is female.

33. The method of claim 31, wherein the patient is male.

34. The method of claim 31, wherein the composition is administered by intracavernosal injection, by transurethral application or topically.

35. The method of claim 34, wherein the composition is administered topically in the form of a cream, a spray, a lotion, a gel, an ointment, an emulsion, a foam, a coating for a condom, or a liposome composition.

36. A method for treating a cardiovascular disorder, a cerebrovascular disorder, hypertension, asthma, baldness, urinary incontinence, epilepsy, a sleep disorder, a gastrointestinal disorder, a migraine, an irritable bowel syndrome or sensitive skin in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 23.

37. The composition of claim 23, further comprising at least one vasoactive agent.

38. The composition of claim 37, wherein the vasoactive agent is a a calcium channel blocker, an α-adrenergic receptor antagonist, a β–blocker, a

phosphodiesterase inhibitor, adenosine, an ergot alkaloid, a vasoactive intestinal peptide, a prostaglandin, a dopamine agonist, a prostaglandin, an opioid antagonist, an endothelin antagonist, a thromboxane inhibitor or a mixture thereof.

39. A method for treating a sexual dysfunction in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 37.

40. The method of claim 39, wherein the patient is female.

41. The method of claim 39, wherein the patient is male.

42. The method of claim 39, wherein the composition is administered by intracavernosal injection, by transurethral application or topically.

43. The method of claim 42, wherein the composition is administered topically in the form of a cream, a spray, a lotion, a gel, an ointment, an emulsion, a foam, a coating for a condom, or a liposome composition.

44. A method for treating a cardiovascular disorder, a cerebrovascular disorder, hypertension, asthma, baldness, urinary incontinence, epilepsy, a sleep disorder, a gastrointestinal disorder, a migraine, an irritable bowel syndrome or sensitive skin in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 37.

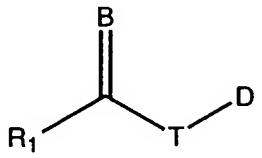
45. A composition comprising at least one potassium channel activator or a pharmaceutically acceptable salt thereof and at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor or is a substrate for nitric oxide synthase or a pharmaceutically acceptable salt thereof.

46. The composition of claim 45, wherein the potassium channel activator is nicorandil, pinacidil, cromakalim, aprikalim, bimakalim, emakalim, lemakalim, minoxidil, diazoxide, 9-chloro-7-(2-chlorophenyl)-5H-pyrimido(5,4,-d)(2)-benzazepine, Ribi, CPG-11952, CGS-9896, ZD 6169, diazixide, Bay X 9227, P1075, Bay X 9228, SDZ PCO 400, WAY-120,491, WAY-120,129, Ro 31-6930, SR 44869, BRL 38226, S 0121, SR 46142A, CGP 42500, SR 44994, artilide fumarate, lorazepam, temazepam, rilmazafone, nimetazepam, midazolam, lormetazepam, loprazolam, ibutilide fumarate, haloxazolam, flunitrazepam, estazolam, doxefazepam, clonazepam, cinolazepa, brotizolam or a pharmaceutically acceptable salt thereof.

47. The composition of claim 46, wherein the potassium channel activator is nicorandil, pinacidil, cromakalim or minoxidil.

48. The composition of claim 45, wherein the potassium channel activator is a compound of Formula (A) or Formula (B), or a pharmaceutically acceptable salt thereof,

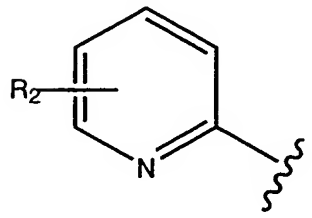
wherein the compound of Formual (A) is:

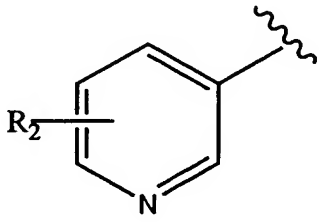


(A)

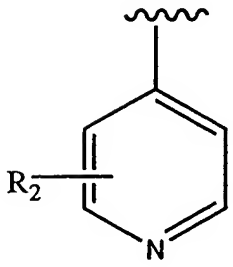
wherein

R_1 is:

(1) 

(2) 

or

(3) 

wherein

R_2 is a hydrogen atom or a halogen atom;

B is oxygen or -N-CN; and

D is A or J;

A is $-W_a-E_b-(C(R_e)(R_f))_p-E_c-(C(R_e)(R_f))_x-W_d-(C(R_e)(R_f))_y-W_i-E_j-W_g-(C(R_e)(R_f))_z-$

ONO_2;

J is $-W_a-E_b(C(R_e)(R_f))_p-E_c-(C(R_e)(R_f))_x-W_d-(C(R_e)(R_f))_y-W_i-E_j-W_g-(C(R_e)(R_f)(R_h))_z$;

a, b, c, d, g, i and j are each independently an integer from 0 to 3;

p, x, y and z are each independently an integer from 0 to 10;

W at each occurrence is independently -C(O)-, -C(S)-, -T-, $-(C(R_e)(R_f))_h-$, an alkyl group, an aryl group, a heterocyclic ring, an arylheterocyclic ring, or $-(CH_2CH_2O)_q-$;

E at each occurrence is independently -T-, an alkyl group, an aryl group, $-(C(R_e)(R_f))_h-$, a heterocyclic ring, an arylheterocyclic ring, or $-(CH_2CH_2O)_q-$;

h is an integer form 1 to 10;

q is an integer from 1 to 5;

R_e, R_f and R_h are each independently a hydrogen, an alkyl, a cycloalkoxy, a halogen, a hydroxy, an hydroxyalkyl, an alkoxyalkyl, an arylheterocyclic ring, an alkylaryl, a cycloalkylalkyl, a heterocyclicalkyl, an alkoxy, a haloalkoxy, an amino, an alkylamino, a dialkylamino, an arylamino, a diarylamino, an alkylarylamino, an alkoxyhaloalkyl, a haloalkoxy, a sulfonic acid, a sulfonic ester, an alkylsulfonic acid, an arylsulfonic acid, an arylalkoxy, an alkylthio, an arylthio, a cycloalkylthio, a cycloalkenyl, a cyano, an aminoalkyl, an aminoaryl, an aryl, an arylalkyl, an alkylaryl, a carboxamido, a alkylcarboxamido, an arylcarboxamido, an amidyl, a carboxyl, a carbamoyl, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarbonyl, an arylcarbonyl, an ester, a carboxylic ester, an alkylcarboxylic ester, an arylcarboxylic ester, a haloalkoxy, a sulfonamido, an alkylsulfonamido, an arylsulfonamido, a sulfonic ester, a urea, a phosphoryl, a nitro, or R_e and R_f or R_e, R_f and R_h taken together with the carbons to which they are attached form a carbonyl, a methanthial, a heterocyclic ring, a cycloalkyl group or a bridged cycloalkyl group;

k is an integer from 1 to 3;

T at each occurrence is independently a covalent bond, a carbonyl, an oxygen, $-S(O)_o-$ or $-N(R_a)R_i-$;

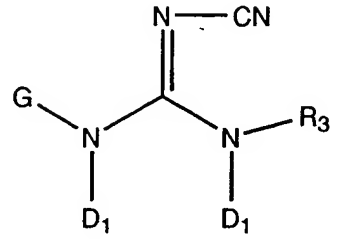
o is an integer from 0 to 2;

R_a is a lone pair of electrons, a hydrogen or an alkyl group;

R_i is a hydrogen, an alkyl, an aryl, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarboxylic ester, an arylcarboxylic ester, an alkylcarboxamido, an arylcarboxamido, an alkylaryl, an alkylsulfinyl, an alkylsulfonyl, an arylsulfinyl, an

arylsulfonyl, a sulfonamido, a carboxamido, a carboxylic ester, an amino alkyl, an amino aryl; and

wherein the compound of Formula (B) is:



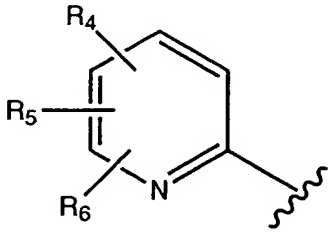
(B)

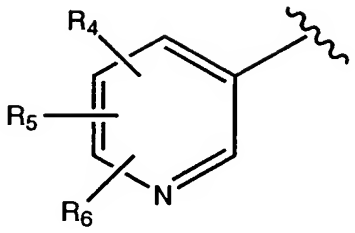
wherein

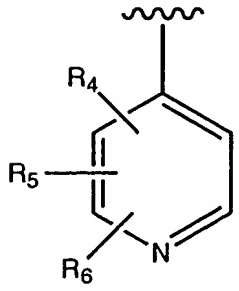
R_3 is a hydrogen, an alkyl, an aryl, an alkylaryl;

D_1 is a hydrogen atom or an alkyl group; and

G is:

(1) 

(2)  or

(3) 

wherein R_4, R_5, and R_6 are each independently a hydrogen, a halogen, a hydroxy, a lower alkyl, an alkoxy, a nitrile, a nitrite, a carboxyamido, a carboxylic ester, an alkylsulfinyl, an arylsulfinyl, an aminoalkyl, an alkylthio, an arylthio; or R_5 and R_6 taken together are a group which forms a ring with the two carbon atoms to which

they are attached, wherein the group is $-S(O)_t-(CH_2)_r-CH_2-$, $-C(O)Z-(CH_2)_o-CH_2-$, or $-C(O)-CH_2-(CH_2)_o-Z-$;

t is an integer of 1 or 2;

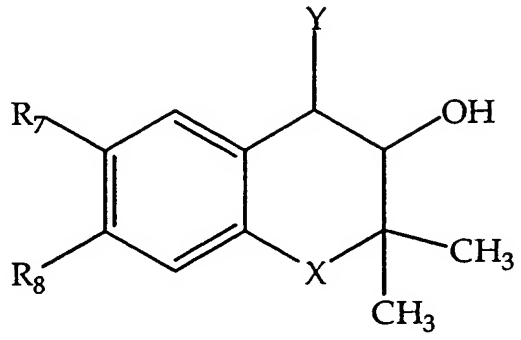
r is an integer from 1 to 3;

Z is oxygen, NR_7 or CH_2;

R_7 is hydrogen or R_3; and

o is as defined herein;

wherein the compound of Formula (C) is:



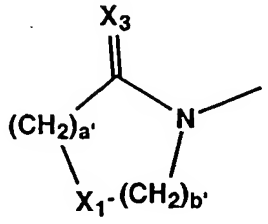
(C)

wherein

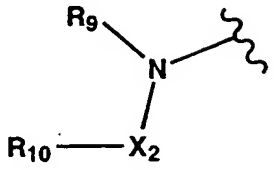
X $-(CH_2)_a-$ or oxygen;

Y is:

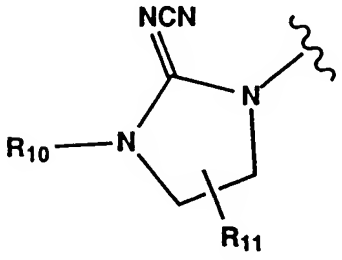
(a)



(b)



(c)



(d)

or $-X_1R_{13}$

R_7 and R_8 are each independently a hydrogen, an alkylcarbonyl, an alkoxycarbonyl, a heterocyclic ring, an ester, a nitro, a cyano, a halo, a haloalkyl, an alkylsulphinyl, an alkylsulphonyl, a sulfonic ester, an amidyl, a carbamate, a formyl, a sulfonamido, or a carboxamido;

R_9 is an aryl or a heterocyclic ring;

R_{10} is a carboxylic ester, a carboxylic acid, a carboxamido, a urea, a thiourea, an amidyl, a sulfamoyl, a hydroxyalkyl, -C(O)OD, $-N(R_{59})(C{=}NCN)NR_{51}R_{57}$, $-N(R_{59})(C{=}NCN)SR_{12}$, $-N(R_{59})(C{=}NCN)OR_{12}$, $-P(O)(OR_{50})_2$, $-P(O)(O(CH_2)_{k'}O)$, $-SR_{11}$, $-S(O)R_{11}$, $-S(O)_2R_{11}$, $-OR_{11}$, a cyano, a heterocyclic ring, a pyridine N-oxide or $-C(NR_{51}R_{57})=CH-C(O)R_{59}$;

R_{11} is a hydrogen, an alkyl, an aryl, an arylalkyl, a cycloalkyl, or cycloalkylalkyl;

R_{12} is an alkyl, an aryl, an alkylaryl, or an arylheterocyclic ring;

R_{13} is aryl, a heterocyclic ring, a cycloalkyl

X_1 is an oxygen, a sulfur, or -NH-;

X_2 is a hydrogen or an alkyl group;

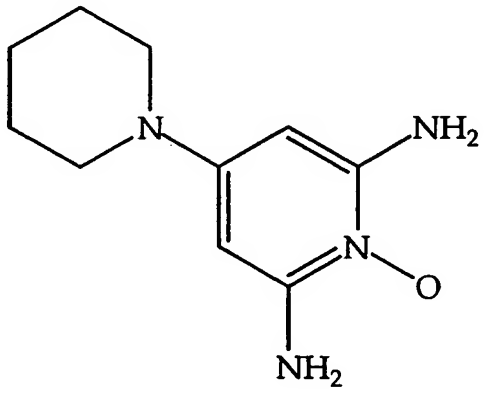
X_3 is oxygen or sulfur;

k' is an interger from 2 to 4;

a' and b'are each independently an integer from 0 to 3; and

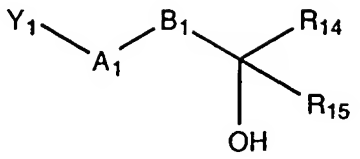
a, D, R_{50}, R_{51}, R_{57} and R_{59} are as defined herein;

wherein the compound of Formula (D) is:



(D)

wherein the compound of Formula (E) is:



(E)

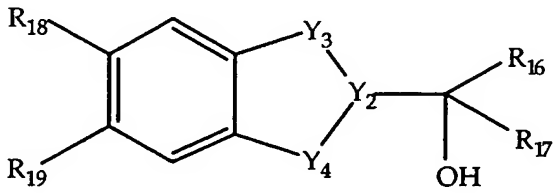
wherein,

R_{14} and R_{15} are each independently a lower alkyl, a lower haloalkyl or R_{14} and R_{15} together with the carbon to which they are attached form a cyclic haloalkyl group;

A_1-B_1 is -NHC(O)-, -OCH_2-, -SCH_2- $NHCH_2$, -CH=CH-, or -CH=CH-; and

Y_1 is an aryl group.

wherein the compound of Formula (F) is:



(F)

wherein,

R_{16} and R_{17} are each independently a lower alkyl, a lower haloalkyl or R_{16} and R_{17} together with the carbon to which they are attached form a cyclic haloalkyl group;

Y_3 is an sp^2-hybridized atom and Y_2, Y_3, and Y_4 together with the carbon atoms to which they are attached form a 5- or 6-membered heterocyclic ring;

R_{18} and R_{19} are each independently a hydrogen, a nitro, a cyano, a halo, a haloalkyl, an alkylsulfonyl, or an aryl, with the proviso that either R_{18} or R_{19} must be a hydrogen but that both R_{18} and R_{19} cannot be a hydrogen.

49. The composition of claim 45, wherein the at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor or is a substrate for nitric oxide synthase is an S-nitrosothiol.

50. The composition of claim 46, wherein the S-nitrosothiol is S-nitroso-N-acetylcysteine, S-nitroso-captopril, S-nitroso-N-acetylpenicillamine, S-nitroso-homocysteine, S-nitroso-cysteine or S-nitroso-glutathione.

51. The composition of claim 49, wherein the S-nitrosothiol is:

(i) $HS(C(R_e)(R_f))_mSNO$;

(ii) $ONS(C(R_e)(R_f))_mR_e$; and

(iii) $H_2N\text{-}CH(CO_2H)\text{-}(CH_2)_m\text{-}C(O)NH\text{-}CH(CH_2SNO)\text{-}C(O)NH\text{-}CH_2\text{-}CO_2H$;

wherein m is an integer from 2 to 20; R_e and R_f are each independently a hydrogen, an alkyl, a cycloalkoxy, a halogen, a hydroxy, an hydroxyalkyl, an alkoxyalkyl, an arylheterocyclic ring, an alkylaryl, a cycloalkylalkyl, a heterocyclicalkyl, an alkoxy, a haloalkoxy, an amino, an alkylamino, a dialkylamino, an arylamino, a diarylamino, an alkylarylamino, an alkoxyhaloalkyl, a haloalkoxy, a sulfonic acid, a sulfonic ester, an alkylsulfonic acid, an arylsulfonic acid, an arylalkoxy, an alkylthio, an arylthio, a cycloalkylthio, a cycloalkenyl, a cyano, an aminoalkyl, an aminoaryl, an aryl, an arylalkyl, an alkylaryl, a carboxamido, a alkylcarboxamido, an arylcarboxamido, an amidyl, a carboxyl, a carbamoyl, a carbamate, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarbonyl, an arylcarbonyl, an ester, a carboxylic ester, an alkylcarboxylic ester, an arylcarboxylic ester, a haloalkoxy, a sulfonamido, an alkylsulfonamido, an arylsulfonamido, a sulfonic ester, a urea, a phosphoryl, a nitro, -T-Q , or $(C(R_e)(R_f))_k$-T-Q, or R_e and R_f taken together with the carbons to which they are attached form a carbonyl, a methanthial, a heterocyclic ring, a cycloalkyl group or a bridged cycloalkyl group; Q is -NO or $-NO_2$; and T is independently a covalent bond, a carbonyl, an oxygen, $-S(O)_o-$ or $-N(R_a)R_i-$, wherein o is an integer from 0 to 2, R_a is a lone pair of electrons, a hydrogen or an alkyl group; R_i is a hydrogen, an alkyl, an aryl, an alkylcarboxylic acid, an aryl carboxylic acid, an alkylcarboxylic ester, an arylcarboxylic ester, an alkylcarboxamido, an arylcarboxamido, an alkylaryl, an alkylsulfinyl, an alkylsulfonyl, an arylsulfinyl, an arylsulfonyl, a sulfonamido, a carboxamido, a carboxylic ester, an amino alkyl, an amino aryl, $-CH_2\text{-}C(T\text{-}Q)(R_e)(R_f)$, or $-(N_2O_2\text{-})\bullet M^+$, wherein M^+ is an organic or inorganic cation; with the proviso that when R_i is $-CH_2\text{-}C(T\text{-}Q)(R_e)(R_f)$ or $-(N_2O_2\text{-})\bullet M^+$; then "-T-Q" can be a hydrogen, an alkyl group, an alkoxyalkyl group, an aminoalkyl group, a hydroxy group or an aryl group.

52. The composition of claim 45, wherein the at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase is:

(i) a compound that comprises at least one ON-O-, ON-N- or ON-C- group;

(ii) a compound that comprises at least one O_2N-O-, O_2N-N-, O_2N-S- or -O_2N-C- group;

(iii) a N-oxo-N-nitrosoamine having the formula: R^1R^2-N(O-M^+)-NO, wherein R^1 and R^2 are each independently a polypeptide, an amino acid, a sugar, an oligonucleotide, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted hydrocarbon, or a heterocyclic group, and M^+ is an organic or inorganic cation.

53. The composition of claim 52, wherein the compound comprising at least one ON-O-, ON-N- or ON-C- group is an ON-O-polypeptide, an ON-N-polypepetide, an ON-C-polypeptide, an ON-O-amino acid, an ON-N-amino acid, an ON-C-amino acid, an ON-O-sugar, an ON-N-sugar, an ON-C-sugar, an ON-O-oligonucleotide, an ON-N-oligonucleotide, an ON-C-oligonucleotide, a straight or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic ON-O-hydrocarbon, a straight or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic ON-N-hydrocarbon, a straight or branched, saturated or unsaturated, substituted or unsubstituted, aliphatic or aromatic ON-C-hydrocarbon, an ON-O-heterocyclic compound, an ON-N-heterocyclic compound or a ON-C-heterocyclic compound.

54. The composition of claim 52, wherein compound comprising at least one O_2N-O-, O_2N-N-, O_2N-S- or O_2N-C- group is an O_2N-O-polypeptide, an O_2N-N-polypeptide, an O_2N-S-polypeptide, an O_2N-C-polypeptide, an O_2N-O-amino acid, O_2N-N-amino acid, O_2N-S-amino acid, an O_2N-C-amino acid, an O_2N-O-sugar, an O_2N-N-sugar, O_2N-S-sugar, an O_2N-C-sugar, an O_2N-O-oligonucleotide, an O_2N-N-oligonucleotide, an O_2N-S-oligonucleotide, an O_2N-C-oligonucleotide, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted O_2N-O-hydrocarbon, a straight or branched, saturated or unsaturated,

aliphatic or aromatic, substituted or unsubstituted O_2N-N-hydrocarbon, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted O_2N-S-hydrocarbon, a straight or branched, saturated or unsaturated, aliphatic or aromatic, substituted or unsubstituted O_2N-C-hydrocarbon, an O_2N-O-heterocyclic compound, an O_2N-N-heterocyclic compound, an O_2N-S-heterocyclic compound or an O_2N-C-heterocyclic compound.

55. The composition of claim 45, wherein the at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase, is L-arginine, L-homoarginine, N-hydroxy-L-arginine, nitrosated L-arginine, nitrosylated L-arginine, nitrosated N-hydroxy-L-arginine, nitrosylated N-hydroxy-L-arginine, citrulline, ornithine, glutamine, lysine, polypeptides comprising at least one of these amino acids or inhibitors of the enzyme arginase.

56. A method for treating a sexual dysfunction in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 45.

57. The method of claim 56, wherein the patient is female.

58. The method of claim 56, wherein the patient is male.

59. The method of claim 56, wherein the composition is administered by intracavernosal injection, by transurethral application or topically.

60. The method of claim 59, wherein the composition is administered topically in the form of a cream, a spray, a lotion, a gel, an ointment, an emulsion, a foam, a coating for a condom, or a liposome composition.

61. A method for treating a cardiovascular disorder, a cerebrovascular disorder, hypertension, asthma, baldness, urinary incontinence, epilepsy, a sleep disorder, a gastrointestinal disorder, a migraine, an irritable bowel syndrome or sensitive skin in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 45.

62. The composition of claim 45, further comprising at least one vasoactive agent.

63. The composition of claim 62, wherein the vasoactive agent is a a calcium channel blocker, an α-adrenergic receptor antagonist, a β–blocker, a

phosphodiesterase inhibitor, adenosine, an ergot alkaloid, a vasoactive intestinal peptide, a prostaglandin, a dopamine agonist, an opioid antagonist, an endothelin antagonist, a thromboxane inhibitor or a mixture thereof.

64. A method for treating a sexual dysfunction in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 62.

65. The method of claim 62, wherein the patient is female.

66. The method of claim 62, wherein the patient is male.

67. The method of claim 62, wherein the composition is administered by intracavernosal injection, by transurethral application or topically.

68. The method of claim 67, wherein the composition is administered topically in the form of a cream, a spray, a lotion, a gel, an ointment, an emulsion, a foam, a coating for a condom, or a liposome composition.

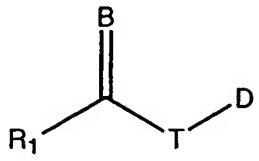
69. A method for treating a cardiovascular disorder, a cerebrovascular disorder, hypertension, asthma, baldness, urinary incontinence, epilepsy, a sleep disorder, a gastrointestinal disorder, a migraine, an irritable bowel syndrome or sensitive skin in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 62.

70. A composition comprising a potassium channel activator and a vasoactive agent.

71. The composition of claim 70, the potassium channel activator is nicorandil, pinacidil, cromakalim, aprikalim, bimakalim, emakalim, lemakalim, minoxidil, diazoxide, 9-chloro-7-(2-chlorophenyl)-5H-pyrimido(5,4,-d)(2)-benzazepine, Ribi, CPG-11952, CGS-9896, ZD 6169, diazixide, Bay X 9227, P1075, Bay X 9228, SDZ PCO 400, WAY-120,491, WAY-120,129, Ro 31-6930, SR 44869, BRL 38226, S 0121, SR 46142A, CGP 42500, SR 44994, artilide fumarate, lorazepam, temazepam, rilmazafone, nimetazepam, midazolam, lormetazepam, loprazolam, ibutilide fumarate, haloxazolam, flunitrazepam, estazolam, doxefazepam, clonazepam, cinolazepam, brotizolam or a pharmaceutically acceptable salt thereof.

72. The composition of claim 70, wherein the potassium channel activator is a compound of Formula (A), Formula (B), Formula (C), Formula (D), Formula (E), or Formula (F),

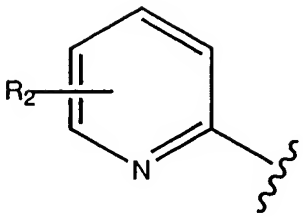
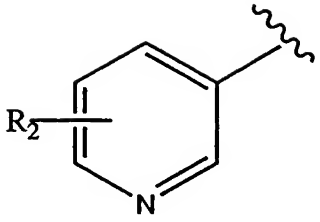
wherein the compound of Formual (A) is:

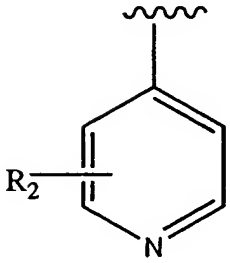


(A)

wherein

R_1 is:

(1)  (2)  or

(3) 

wherein

R_2 is a hydrogen atom or a halogen atom;

B is oxygen or -N-CN; and

D is A or J;

A is $-W_a-E_b-(C(R_e)(R_f))_p-E_c-(C(R_e)(R_f))_x-W_d-(C(R_e)(R_f))_y-W_i-E_j-W_g-(C(R_e)(R_f))_z-ONO_2$;

J is $-W_a-E_b(C(R_e)(R_f))_p-E_c-(C(R_e)(R_f))_x-W_d-(C(R_e)(R_f))_y-W_i-E_j-W_g-(C(R_e)(R_f)(R_h))_z$;

a, b, c, d, g, i and j are each independently an integer from 0 to 3;

p, x, y and z are each independently an integer from 0 to 10;

W at each occurrence is independently -C(O)-, -C(S)-, -T-, $-(C(R_e)(R_f))_h-$, an alkyl group, an aryl group, a heterocyclic ring, an arylheterocyclic ring, or $-(CH_2CH_2O)_q-$;

E at each occurrence is independently -T-, an alkyl group, an aryl group,

$-(C(R_e)(R_f))_h-$, a heterocyclic ring, an arylheterocyclic ring, or $-(CH_2CH_2O)_q-$;

h is an integer form 1 to 10;

q is an integer from 1 to 5;

R_e, R_f and R_h are each independently a hydrogen, an alkyl, a cycloalkoxy, a halogen, a hydroxy, an hydroxyalkyl, an alkoxyalkyl, an arylheterocyclic ring, an alkylaryl, a cycloalkylalkyl, a heterocyclicalkyl, an alkoxy, a haloalkoxy, an amino, an alkylamino, a dialkylamino, an arylamino, a diarylamino, an alkylarylamino, an alkoxyhaloalkyl, a haloalkoxy, a sulfonic acid, a sulfonic ester, an alkylsulfonic acid, an arylsulfonic acid, an arylalkoxy, an alkylthio, an arylthio, a cycloalkylthio, a cycloalkenyl, a cyano, an aminoalkyl, an aminoaryl, an aryl, an arylalkyl, an alkylaryl, a carboxamido, a alkylcarboxamido, an arylcarboxamido, an amidyl, a carboxyl, a carbamoyl, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarbonyl, an arylcarbonyl, an ester, a carboxylic ester, an alkylcarboxylic ester, an arylcarboxylic ester, a haloalkoxy, a sulfonamido, an alkylsulfonamido, an arylsulfonamido, a sulfonic ester, a urea, a phosphoryl, a nitro, or R_e and R_f or R_e, R_f and R_h taken together with the carbons to which they are attached form a carbonyl, a methanthial, a heterocyclic ring, a cycloalkyl group or a bridged cycloalkyl group;

k is an integer from 1 to 3;

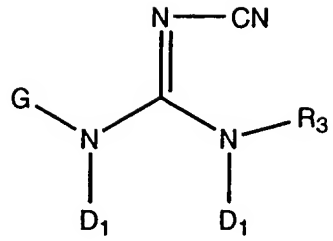
T at each occurrence is independently a covalent bond, a carbonyl, an oxygen, $-S(O)_o-$ or $-N(R_a)R_i-$;

o is an integer from 0 to 2;

R_a is a lone pair of electrons, a hydrogen or an alkyl group;

R_i is a hydrogen, an alkyl, an aryl, an alkylcarboxylic acid, an arylcarboxylic acid, an alkylcarboxylic ester, an arylcarboxylic ester, an alkylcarboxamido, an arylcarboxamido, an alkylaryl, an alkylsulfinyl, an alkylsulfonyl, an arylsulfinyl, an arylsulfonyl, a sulfonamido, a carboxamido, a carboxylic ester, an amino alkyl, an amino aryl; and

wherein the compound of Formula (B) is:



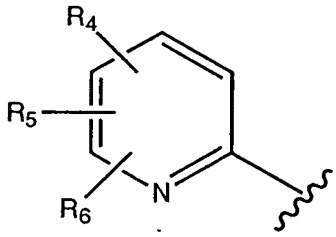
(B)

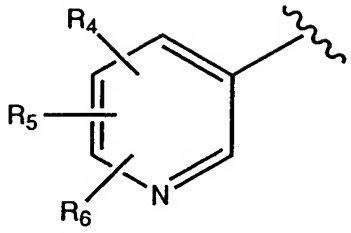
wherein

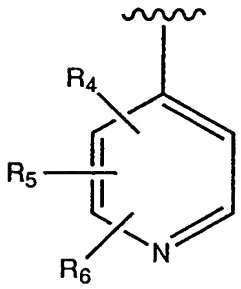
R_3 is a hydrogen, an alkyl, an aryl, an alkylaryl;

D_1 is a hydrogen atom or an alkyl group; and

G is:

(1) 

(2)  or

(3) 

wherein R_4, R_5, and R_6 are each independently a hydrogen, a halogen, a hydroxy, a lower alkyl, an alkoxy, a nitrile, a nitrite, a carboxyamido, a carboxylic ester, an alkylsulfinyl, an arylsulfinyl, an aminoalkyl, an alkylthio, an arylthio; or R_5 and R_6 taken together are a group which forms a ring with the two carbon atoms to which they are attached, wherein the group is $-S(O)_t-(CH_2)_r-CH_2-$, $-C(O)Z-(CH_2)_o-CH_2-$, or $-C(O)-CH_2-(CH_2)_o-Z-$;

t is an integer of 1 or 2;

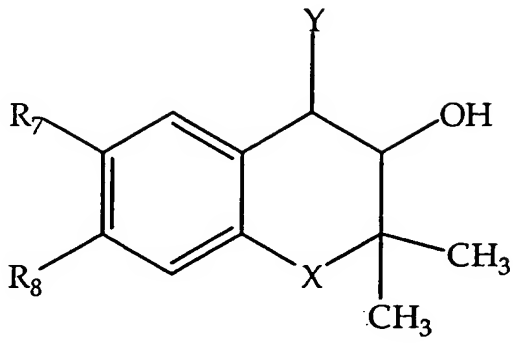
r is an integer from 1 to 3;

Z is oxygen, NR_7 or CH_2;

R_7 is hydrogen or R_3; and

o is as defined herein;

wherein the compound of Formula (C) is:



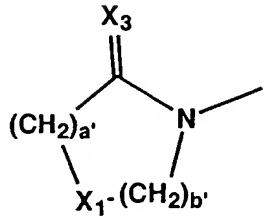
(C)

wherein

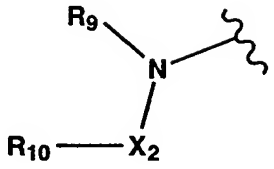
X $-(CH_2)_a-$ or oxygen;

Y is:

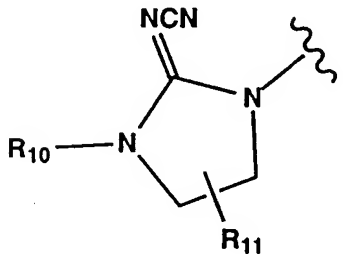
(a)



(b)



(c)



(d)

or $-X_1R_{13}$

R_7 and R_8 are each independently a hydrogen, an alkylcarbonyl, an alkoxycarbonyl, a heterocyclic ring, an ester, a nitro, a cyano, a halo, a haloalkyl, an alkylsulphinyl, an alkylsulphonyl, a sulfonic ester, an amidyl, a carbamate, a formyl, a sulfonamido, or a carboxamido;

R_9 is an aryl or a heterocyclic ring;

R_{10} is a carboxylic ester, a carboxylic acid, a carboxamido, a urea, a thiourea, an amidyl, a sulfamoyl, a hydroxyalkyl, -C(O)OD, $-N(R_{59})(C=NCN)NR_{51}R_{57}$, $-N(R_{59})(C=NCN)SR_{12}$, $-N(R_{59})(C=NCN)OR_{12}$, $-P(O)(OR_{50})_2$, $-P(O)(O(CH_2)_k O)$, $-SR_{11}$, $-S(O)R_{11}$, $-S(O)_2R_{11}$, $-OR_{11}$, a cyano, a heterocyclic ring, a pyridine N-oxide or $-C(NR_{51}R_{57})=CH-C(O)R_{59}$;

R_{11} is a hydrogen, an alkyl, an aryl, an arylalkyl, a cycloalkyl, or cycloalkylalkyl;

R_{12} is an alkyl, an aryl, an alkylaryl, or an arylheterocyclic ring;

R_{13} is aryl, a heterocyclic ring, a cycloalkyl

X_1 is an oxygen, a sulfur, or -NH-;

X_2 is a hydrogen or an alkyl group;

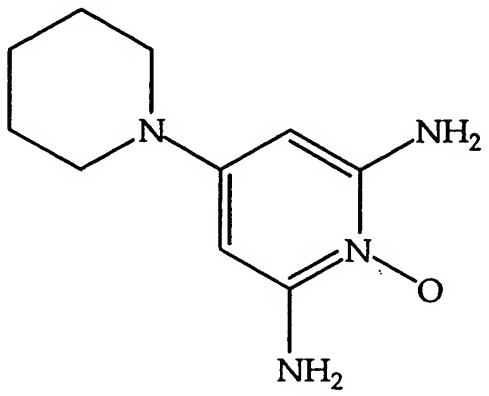
X_3 is oxygen or sulfur;

k' is an interger from 2 to 4;

a' and b'are each independently an integer from 0 to 3; and

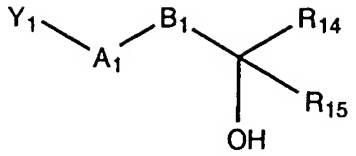
a, D, R_{50}, R_{51}, R_{57} and R_{59} are as defined herein;

wherein the compound of Formula (D) is:



(D)

wherein the compound of Formula (E) is:



(E)

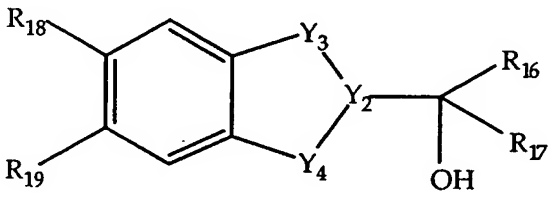
wherein,

R_{14} and R_{15} are each independently a lower alkyl, a lower haloalkyl or R_{14} and R_{15} together with the carbon to which they are attached form a cyclic haloalkyl group;

A_1-B_1 is -NHC(O)-, -OCH_2-, -SCH_2- $NHCH_2$, -CH=CH-, or -CH=CH-; and

Y_1 is an aryl group.

wherein the compound of Formula (F) is:



(F)

wherein,

R_{16} and R_{17} are each independently a lower alkyl, a lower haloalkyl or R_{16} and R_{17} together with the carbon to which they are attached form a cyclic haloalkyl group;

Y_3 is an sp^2-hybridized atom and Y_2, Y_3, and Y_4 together with the carbon atoms to which they are attached form a 5- or 6-membered heterocyclic ring;

R_{18} and R_{19} are each independently a hydrogen, a nitro, a cyano, a halo, a haloalkyl, an alkylsulfonyl, or an aryl, with the proviso that either R_{18} or R_{19} must be a hydrogen but that both R_{18} and R_{19} cannot be a hydrogen.

73. The composition of claim 69, wherein the potassium channel activator is nicorandil, pinacidil, cromakalim or minoxidil.

74. The composition of claim 68, wherein the vasoactive agent is a a calcium channel blocker, an α-adrenergic receptor antagonist, a β–blocker, a

phosphodiesterase inhibitor, adenosine, an ergot alkaloid, a vasoactive intestinal peptide, a prostaglandin, a dopamine agonist, an opioid antagonist, an endothelin antagonist, a thromboxane inhibitor or a mixture thereof.

75. A method for treating a sexual dysfunction in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 70.

76. The method of claim 75, wherein the patient is female.

77. The method of claim 75, wherein the patient is male.

78. The method of claim 75, wherein the composition is administered by intracavernosal injection, by transurethral application or topically.

79. The method of claim 78, wherein the composition is administered topically in the form of a cream, a spray, a lotion, a gel, an ointment, an emulsion, a foam, a coating for a condom, or a liposome composition.

80. A method for treating a cardiovascular disorder, a cerebrovascular disorder, hypertension, asthma, baldness, urinary incontinence, epilepsy, a sleep disorder, a gastrointestinal disorder, a migraine, an irritable bowel syndrome or sensitive skin in a patient in need thereof comprising administering to the patient a therapeutically effective amount of the composition of claim 70.

81. A kit comprising at least one compound of claim 2 and at least one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor or is a substrate for nitric oxide synthase, or a pharmaceutically acceptable salt thereof.

82. The kit of claim 81, further comprising at least one vasoactive agent.

83. The kit of claim 81, wherein the compound of claim 2 and the compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase are separate components in the kit.

84. The kit of claim 81, wherein the compound of claim 2 and the compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase are in the form of a composition in the kit.

85. A kit comprising at least one potassium channel activator and at least

one compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor or is a substrate for nitric oxide synthase, or a pharmaceutically acceptable salt thereof.

86. The kit of claim 85, further comprising at least one vasoactive agent.

87. The kit of claim 85, wherein the potassium channel activator and the compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase are separate components in the kit.

88. The kit of claim 85, wherein the potassium channel activator and the compound that donates, transfers, or releases nitric oxide, or induces the production of endogenous nitric oxide or endothelium-derived relaxing factor, or is a substrate for nitric oxide synthase are in the form of a composition in the kit.